

CLAIMS

1. A seal device (1) for providing a seal against a sealing object fluid
5 between a rotary shaft and a housing accommodating said rotary shaft
extending therethrough, said seal device comprising:
a) a seal ring (11) being mounted onto said housing and having a seal
surface (11B);
b) a seal lip member (15) being arranged in the opposite side of said
10 seal surface (11B) of said seal ring (11), an outer peripheral portion of
said seal lip member (15) being mounted on said housing, said seal lip
member (15) having a lip portion (15A), said lip portion (15A) being
brought into fitting close contact with said rotary shaft; and
c) a face end seal (2) opposing to said seal ring (11) and being fixed on
15 said rotary shaft in a fluid tight seal manner, said face end seal (2)
having a protruding lip member (3), said protruding lip member (3)
extending from one end portion toward said seal surface (11B) and
being capable of forming close contact with said seal surface (11B),
wherein said protruding lip member (3) is at an angle to said seal
20 surface (11B) in radially outward a direction which is in the fluid side;
and
wherein said lip portion (15A) of said seal lip member (15) is disposed
inside an inner diameter surface (11A) of said seal ring (11) for
effecting a seal against the fluid.
- 25 2. A seal device as claimed in claim 1, wherein said seal lip member (15)
is made of synthetic resin material and said protruding lip member (3)
is made of rubber material.
3. A seal device as claimed in claim 1 or claim 2, wherein a backup ring
(7) is disposed on an inner circumferential surface of said protruding

lip member (3) and provides a support for said protruding lip member (3).

4. A seal device as claimed in claim 1 or claim2 or claim 3, wherein a pressure receiving area (S1) of said end face seal (2) which a sealing object fluid acts on in an axial direction and is located in an outer circumferential side of said protruding lip member (3) is arranged larger than an opposite pressure receiving area (S2) which is located on a back end face of said end face seal (2).

5. A seal device as claimed in claim 1 or claim2 or claim 4, wherein said end face seal (2) retains a reinforcement ring (4) which has an inner circumference support portion (4A) and said inner circumference support portion (4A) is supported by a detent (6).

6. A seal device as claimed in claim 1 or claim2 or claim 3 or claim 4 or claim 5, wherein said lip portion (15A) of said seal lip member (15) is fitted in said inner diameter surface (11A) of said seal ring (11) with a clearance gap therebetween.